TCT-745

Reconsidering Outcomes After Transcatheter Aortic Valve Implantation Following The Valve Academic Research Consortium Definitions

Moritz Seiffert[1], Stephan Baldus[2], Lenard Conradi[1], Malgorzata Knap[2], Johannes Schirmer[1], Stefan Blankenberg[2], Hermann Reichenspurner[1], Hendrik Treede[1]
[1]University Heart Center Hamburg - Department of Cardiovascular Surgery, Hamburg, Germany; [2]University Heart Center Hamburg - Department of General and Interventional Cardiology, Hamburg, Germany

Background: Reporting of outcomes after transcatheter aortic valve implantation (TAVI) has been variable. To allow comparison of these multiple non-randomized trials, the Valve Academic Research Consortium (VARC) recently introduced standardized endpoint definitions. We sought to re-evaluate our single-center experience with TAVI following the VARC definitions.
Methods: From 03/2008 to 06/2011, 285 patients underwent TAVI with Edwards Sapien (ES; Edwards Lifesciences, Irvine, CA) or CoreValve (CV; Medtronic, Minneapolis, MN) devices at our institution. Data were gathered prospectively at baseline, discharge, 30 days and 1 year after TAVI. Retrospective analysis was done according to endpoints recently defined by the VARC.
Results: TAVI was performed via the transapical (TA) approach using the ES in 164 (57.5%) and transfemoral (TF) access in 121 (42.5%; ES: 65.3%, CV: 34.7%) patients. Mean age was 79.9±9.1 years and the TA group showed a higher risk profile with a log EuroSCORE of 25.6±12.8% (TA) vs. 20.4±12.4% (TF; p=0.002). All-cause mortality was 11.1% (TF) vs. 11.2% (TA) at 30 days and 28.1% (TF) vs. 29.1% (TA) at 1 year. Device success was achieved in 86.8% (TF) and 85.4% (TA) of TAVI procedures and 30-day mortality was 8.1% and 10.1% in these patients. The combined 30-day safety endpoint was reached in 15.7% of TF and 20.1% of TA cases. Periprocedural myocardial infarction occurred in 0.8% (TF) and 0.6% (TA), major stroke in 5.0% (TF) and 5.5% (TA), and severe acute kidney injury in 3.3% (TF) and 4.3% (TA). Access site complications were observed in 10.7% (TF) and 3.7% (TA). Conduction disorders required permanent pacemaker implantation in 14.9% (TF; ES: 7.6%, CV: 28.6%) and 13.4% (TA) of patients. NYHA class improved by 1.1±0.7 (TF) and 0.9±0.6 (TA) at 30-day and 0.9±0.6 (TF) and 1.1±0.9 (TA) at 1-year follow-up.
Conclusion: According to standardized endpoint definitions published by the VARC, TAVI with TA and TF approaches can be performed with comparable survival. Nevertheless, the higher risk profile in TA patients seems to find its expression in a higher combined 30-day safety endpoint although this was not reflected in delayed clinical improvement. Device success was not a predictor of survival in this patient series.

TCT-746

Mortality Outcomes in 501 TAVI patients stratified according to age tertiles

Matthias Kornek, Nicolo Piazza, Sabine Bleiziffer, Yacine Elhmidi, Anke Opitz, Hendrik Ruge, Domenico Mazzitelli, Bernhard Voss, Christian Schreiber, Rüdiger Lange
German heart center, department of cardiovascular surgery. Munich, Munich, Germany

Background: Older age is a predictor of early and late mortality following surgical aortic replacement. Patients undergoing transcatheter aortic valve implantation (TAVI) are elderly and associated with multiple comorbidities. We aim to investigate whether differences exist in clinical presentation and outcomes according to age in patients undergoing TAVI.
Methods: From June 2007 to June 2010 consecutive TAVI patients were prospectively entered into a dedicated database. Patients were subdivided into age tertiles (A1 to A3) and these subgroups were subsequently examined for any differences in baseline characteristics, and 30-day and 6-month mortality. Kaplan Meier curves were used to estimate survival in all groups.
Results: A total of 501 patients underwent TAVI (n=342 CoreValve and n=159 Edwards SAPIEN). The age tertiles were identified as < 78 years (A1, n=164 patients), 79 to 83 years (A2, n=173 patients) and older than 84 years (A3, n=164 patients). As compared to A1 patients, A3 patients had higher logistic EuroSCORES (23.4±12.7 vs. 15.7±11.0%, p<0.001), higher STS scores (7.6±4.2 vs. 4.2±3.4%, p<0.001), higher baseline creatinine levels (1.3±0.5 vs. 1.2±0.73 mg/dl, p=0.03) and more coronary artery disease (64 vs. 47.6%, p=0.008). The 30-day mortality was 4-fold higher in A3 than in A1 (11.4 vs. 3.6%, p=0.03) whereas there was no significant difference in mortality observed between A3 and A1 at 6-month follow-up (19 to 15%, p=0.45).
Conclusion: In this TAVI cohort, the 30-day mortality was 4-fold higher in those patients older than 84 years than in those less than 78 years; these differences were no longer appreciated at 6-month follow-up.

TCT-747

Balloon Aortic Valvuloplasty as a Bridging Thearpy to Aortic Valve Replacement or Transcatheter Aortic Valve Implantation

Michael Tempelhof, Nirat Beohar, Chris S Malaisrie, Patrick M McCarthy, Charles J Davidson
Cardiology, Northwestern University, Chicago, IL

Background: Balloon aortic valvuloplasty (BAV) is a therapeutic option for patients with severe aortic stenosis (AS). Clinical outcomes with BAV are limited by restenosis and high mortality rates as compared to surgical aortic valve replacement (AVR). AVR is the recommended therapy for patients with severe AS. BAV as a bridge to AVR for high-surgical risk AS patients has been reported. Transcatheter aortic valve implantation (TAVI) has equal safety and efficacy outcomes compared to AVR. Currently, there is a paucity of information describing the utilization of BAV as a bridge to definitive therapy in the modern era of AVR and TAVI.
Methods: We compared the safety and clinical outcomes associated with BAV alone, to BAV as a bridge to AVR or to TAVI among a high-surgical risk cohort of patients with severe AS.
Results: The medical records of patients who received a BAV procedure for severe AS were analyzed and included in the study (80 patients). Baseline STS scores were higher in the TAVI cohort; other baseline demographics were similar across study cohorts (Table 1). Ten patients were bridged to AVR and fifteen patients were successfully bridged to TAVI. Clinical outcomes of all cause death, cardiovascular death, death 30 days after BAV and rehospitalization for heart failure were compared among the 3 study cohorts (Table 1). There was a significant higher rate of all cause death, cardiovascular death and rehospitalization for heart failure among the BAV-alone cohort compared to the BAV-bridge cohorts (Table 1). Complications rates were low and occurred only in the BAV-alone cohort (Table 1).

Table 1. Baseline Demographics, Clinical Outcomes and Complications

	BAV alone (N=55)	BAV as Bridge to AVR (N=10)	BAV as Bridge to TAVI (N=15)	p Value
Baseline Demographics				
Hypertension	35 (45%)	5 (50%)	5 (33%)	
Diabetes	12 (21%)	4 (40%)	4 (26%)	
Chronic Kidney Disease	6 (11%)	3 (30%)	4 (26%)	
Atrial Fibrillation	11 (20%)	6 (60%)	5 (33%)	
STS	6.3± 3.7	5.6± 3.7	9.8± 3.3	
Clinical Outcomes				
All cause Death	45 (82%)	2 (20%)	2 (13%)	0.008
Cardiovascular Death	8 (15%)	0 (0%)	0 (0%)	0.041
Procedural Death associated with BAV*	0 (0%)	0 (0%)	0 (0%)	NA
Rehospitalization for Heart Failure	21 (38%)	1 (10%)	0 (0%)	0.002
Complications				
NSTEMI**	2 (4%)	0 (0%)	0 (0%)	0.310
STROKE (CVA or TIA)	0 (0%)	0 (0%)	0 (0%)	NA
Vascular complications	4 (7%)	0 (0%)	0 (0%)	0.171
BAV*, Ballon aortic valvuloplasty; NSTEMI**, Non-ST segment elevation myocardial infarction				

Conclusion: BAV is an effective and safe therapeutic option as a bridge to AVR or TAVI. BAV should be considered prior to AVR or TAVI in high-surgical risk patients with severe AS.

TCT-748

Optimal projection for Transcatheter Aortic Valve Implantation determined from the reference projection angles

James Andrew Cockburn, Uday Trivedi, Adam De Belder, David Hildick-Smith
Cardiology Research Unit, Sussex Cardiac Centre, Brighton, United Kingdom

Background: An optimal fluoroscopic working view projection (OP) with all three aortic sinuses aligned is crucial during trans-catheter aortic valve implantation (TAVI). The aim of this study was to identify simple reference projection angles, which would act as a starting point for the operator to help determine OP in patients.
Methods: Procedural outcome data was collected prospectively from 50 patients undergoing TAVI. Optimal angiographic deployment angles were achieved for all patients by starting in an anteroposterior caudal 15 degrees projection and then adjusting according to the initial image, with multiple small volume contrast injections undertaken to determine when all 3 aortic cusps were aligned (OP).
Results: OP angles for the 50 cases were plotted.(Figure 1)Regression analysis enabled a regression line to be calculated. The equation for the regression line was defined as caudal intercept -14.8±1.9 (SEcoefficient), p<0.0001, slope of regression line + 0.453±0.1 (SEcoefficient), p<0.002).

POSTERS